LA-UR-21-24513
Approved for public release; distribution is unlimited.

Title: Machine Learning for Turbulence

Author(s): Mohan, Arvind Thanam

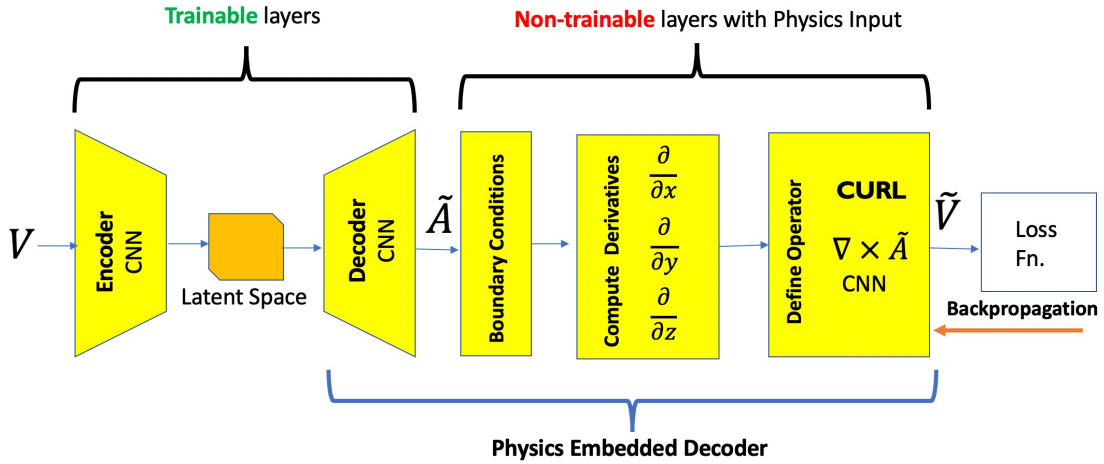
Intended for: Report

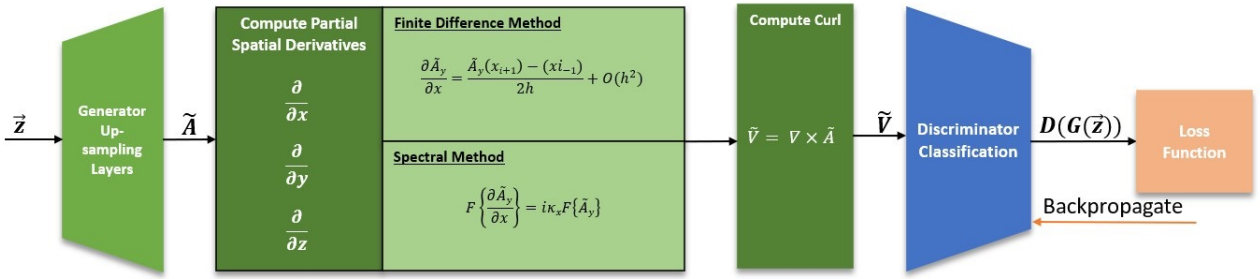
Issued: 2021-05-10

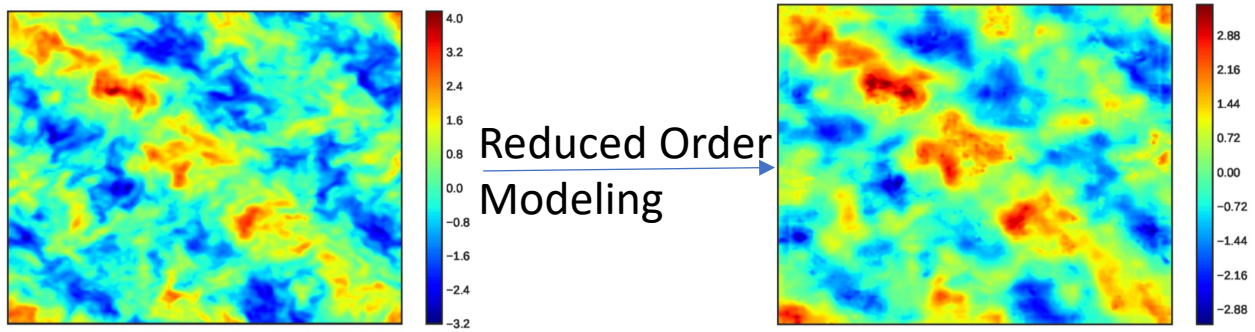
Machine Learning for Turbulence

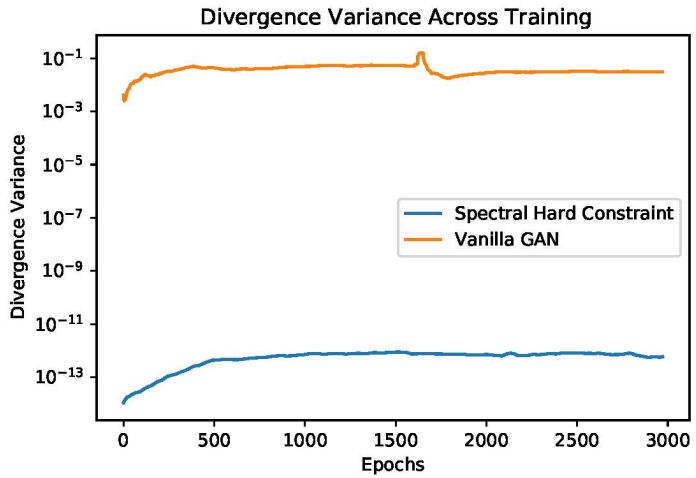
P.I. Arvind Mohan, CCS-2

New Deep Learning architectures that embed physics as **hard constraints** with numerical methods, increasing accuracy and reducing computational cost.









Convolutional Neural Network (Left) and Generative Adversarial Network (Right) enforcing $\nabla \cdot V = 0$ incompressibility constraint in modeling 3D homogeneous isotropic turbulence